

Given the secondary status of Part 15 users in the 902-928 MHz band, greatly increasing the number of licensed operators is tantamount to removing many Part 15 users from the band. This would be clearly contrary to the public interest by eliminating valuable uses of the spectrum and causing a massive amount of stranded investment. The Commission has provided no rationale for proposing such a destructive result other than its perceived need to provide spectrum to new LMS services.

The Commission asserts that AVM and LMS systems can provide public safety entities, such as highway traffic administrators, police departments, and ambulance services, with significant benefits.²⁷ Given the alleged importance of AVM and LMS systems, and the fact that most of these high-tech systems are wide-band in nature, it makes no sense to place these services in the small and crowded 902-928 MHz band. These systems would face harmful interference from Part 15 devices regardless of whether the Commission decided to further restrict Part 15 devices. The installed base of Part 15 devices in the 902-928 MHz band is huge and diverse, running into the millions of devices nationwide. It would be impractical, if not impossible, for

²⁷ Id. at 2502-03, 2506.

the Commission to protect AVM and LMS services from Part 15 interference. Even if the Commission was injudicious enough to stop the manufacturing of new Part 15 devices, the Commission would have to identify, confiscate, and

sequester the millions of existing Part 15 devices.

This band has 220 MHz of spectrum, more than eight times the spectrum of the 902-928 MHz band, and therefore permits the band to be split into different segments for AVM and LMS services with different field strength levels. Since new LMS operators are not yet licensed to operate in the 902-928 MHz band, placing them in the 1.85 to 2.20 GHz band will not cause stranded investment in equipment as would the removal of existing Part 15 users from the 902-928 MHz band. Therefore, the Commission should place AVM and LMS systems elsewhere in the radio spectrum in order to (1) increase these systems' effectiveness in promoting public safety, and (2) avoid the massive dislocation of, and stranded investment by, Part 15 and other current users of the 902-928 MHz band.

III. IMPROVING THE SPECTRUM EFFICIENCY OF LICENSED AVM OPERATORS IN THE 902-928 MHZ BAND SHOULD BE A COMMISSION PRIORITY AND SHOULD CERTAINLY OCCUR PRIOR TO TAKING DRASTIC ACTION AGAINST PART 15 DEVICES

A long-standing policy objective of the Commission is to promote the efficient use of spectrum.²⁹ Imposing further restrictions on Part 15 users in the 902-928 MHz band is a drastic step that should be taken only after

²⁹ See, e.g., Potential Uses of Certain Orbital Allocations By Operators in the Direct Broadcast Satellite Service, 6 FCC Rcd. 2581 at ¶ 6 (1991).

all efforts to improve the spectrum efficiency of current licensed operators have been exhausted. To do otherwise would be inefficient. Whereas Sensormatic and other commercial Part 15 users have made significant investments in spectrum-efficient technology, many licensed radio services in the 902-928 MHz band have not.

In particular, the Commission should not authorize AVM Systems that require a full 8 MHz of spectrum to operate. There is substantial evidence that AVM technology exists which can operate effectively with 4 MHz or less. Some licensed AVM operators that currently require 5, 6, 7 or 8 MHz employ outdated equipment that is spectrum-inefficient. Included in this list of allegedly-inefficient AVM operators are North American Teletrac and Location Technologies ("Teletrac" or "PacTel"), the petitioner which spawned this proceeding, and MobileVision ("Ameritech"). Many parties commenting on the Teletrac petition pointed

out the inefficiency of Teletrac's AVM equipment.³⁰ For example, Pinpoint Communications states that

the Teletrac system is inadequately designed, intolerant of interference, and a poor spectrum neighbor. . . . Ameritech's presentation is premised on the assertion that "it is extremely difficult for AVM systems to tolerate the interference that already exists on AVM frequency bands." This observation, however, is simply not universally applicable, even with respect to wideband hyperbolic multilateration ("HML") systems. As Pinpoint emphasized in its Opposition, it specifically designed its own system to be robust enough to tolerate current and anticipated interference in the 902-928 MHz band.³¹

Similarly, Southwestern Bell states that whereas the PacTel and Ameritech AVM systems require 8 MHz of spectrum to operate, new AVM technology exists that can operate effectively with 4 MHz of spectrum or less.³² Amtech states that there exist "several spectrum approaches in which the AVM

³⁰ See, e.g., Pinpoint Communications Comments at 14-22; Amtech Corporation Reply Comments at 19-23; Allen-Bradley Comments at 5-6; Mark IV IVHS Division Reply Comments at 2-5; Southwestern Bell Comments at 3; American President Companies Comments at 4; Association of American Railroads Comments at 6; The Intelligent Vehicle Society of America Reply Comments at 2-3.

Initial comments were filed on July 23, 1992, and reply comments were filed on August 7, 1992.

³¹ Pinpoint Reply Comments at 2-3.

³² Southwestern Bell Comments at 3; Southwestern Bell Reply Comments at 3.

spectrum could continue to be shared with other users."³³

Allen-Bradley, American President, Mark IV, and the Association of American Railroads all argue that their AVM technologies can operate in the 902-928 MHz band without experiencing interference from other users, including Part 15 users.³⁴

Furthermore, some of these AVM operators join Sensormatic in urging the Commission to explore spectrum-efficient AVM technologies prior to adopting any restrictions on Part 15 users. For example, Pinpoint states that

[s]haring with other services, or with other AVM systems, might be easier had Ameritech and PacTel adopted more state-of-the-radio-art designs . . .

whether other AVM solutions might be more compatible with the existing use of the band.³⁵

Rather than impose operating restrictions that could effectively oust Part 15 users from the 902-928 MHz band, the Commission should conduct an investigation of spectrum-efficient technologies and require all users in the 902-928 MHz band to deploy such spectrum-efficient equipment. In addition, the Commission should explore other ways to improve sharing of spectrum and compatibility between licensed operators and Part 15 users.

One possible method for conducting such investigations would be to establish an Advisory Committee on

³⁵ Pinpoint Reply Comments at 6-7 (emphasis added). Similarly, Amtech argues that spectrum-inefficient AVM technology should not be allowed to jeopardize the viability of Part 15 users:

Ameritech concludes that Part 15 devices can cause significant problems to its AVM technology by raising the interference level seen by receive sites. . . . In short, the comments of Ameritech underscore the AMTECH observations about the fragility of the Teletrac system and demonstrate that Ameritech's nearly identical technology is comparably deficient. . . . Not only would the PacTel proposal displace other AVM users, the amateur allocation and Part 15 uses -- although secondary to AVM at 902-928 MHz -- could ultimately be endangered, thwarting FCC policy objectives.

Amtech Reply Comments at 21-23. See also Pinpoint Comments at 17-18.

Technical Standards for the 902-928 MHz band. The Committee would study interference issues and would be composed of industry leaders representing diverse viewpoints, including licensed AVM operators, Part 15 users, and equipment manufacturers. The Commission has established similar Advisory Committees many times in the past in fields such as advanced television ("ATV"),³⁶ Direct Broadcast Satellite ("DBS"),³⁷ and domestic fixed satellites.³⁸

If the Commission is determined to authorize both AVM and LMS systems in the 902-928 MHz band, spectrum overcrowding should be minimized by authorizing both AVM and LMS services only on an equal, secondary basis with Part 15 users.

³⁶ See Advanced Television Systems and Their Impact on the Existing Television Broadcast Service, 3 FCC Rcd. 6520, 6522, 6545 n.14 (1988); 5 FCC Rcd. 5627, 5627 (1990).

³⁷ See Amendment of Subpart C of Part 100 of the Commission's Rules and Regulations Regarding Technical Standards for the Direct Broadcast Satellite Service, 104 F.C.C.2d 1317, 1318 n.2 (1986); 1985 FCC LEXIS 3903 at ¶ 6 (1985). See also Establishment of a Spectrum Utilization Policy for The Fixed and Mobile Services' Use of Certain Bands Between 947 MHz and 40 GHz, 1984 FCC LEXIS 2120 at ¶ 89 n.25 (1984).

³⁸ See Establishment of an Advisory Committee on Implementation of Reduced Orbit Spacing Between Domestic Fixed Satellites, 102 F.C.C.2d 390 (1985).

A second alternative would be for the Commission
to implement a policy consistent with the intent of the

stantial investment in a complete new series of products using spread-spectrum technology in the 902-905 MHz sub-band. There is no valid reason, and it would be intolerably inequitable, to allow inefficient AVM devices to use the 904-912 MHz sub-band with such a 1-MHz overlap because it would result in Sensormatic having to move again. Under no circumstances should AVM devices be allowed to invade the 902-905 MHz sub-band.

Moreover, with an influx of new Part 15 devices using many frequencies in the 902-928 MHz band expected in the next few years, a continuation of overlaps with AVM systems would also become intolerable for other Part 15 users because it is liable to render Part 15 devices ineffective. Therefore, all overlaps must be eliminated now and AVM systems should, at a minimum, be moved out of the 902-920 MHz sub-band entirely.

CONCLUSION

Sensormatic strongly opposes the Commission's proposal to make permanent the interim rules it adopted in 1974 for AVM systems in the 902-928 MHz band. The Commission's 1974 rationale for temporarily authorizing AVM operation in the band (i.e., no interference potential) is no longer valid. Sensormatic also strongly opposes the

Commission's proposals to (1) flood the entire band with new Location and Monitoring Services ("LMS") under Part 90 and (2) impose crippling new restrictions on Part 15 devices operating in this band in order to accommodate the new LMS services. All three proposals would seriously damage the usefulness of Part 15 devices in the band and would be tantamount to removing many Part 15 devices from the band altogether.

Such shabby treatment of Part 15 devices in the 902-928 MHz band would be totally inconsistent with the policy objectives enunciated by the Commission repeatedly for over 20 years. Part 15 manufacturers and users have relied heavily on the Commission's long-standing policy of encouraging Part 15 uses in the 902-928 MHz band. To abruptly reverse course now and render such devices useless would be outrageously unjust, confiscatory and contrary to the public interest. Furthermore, the embedded base of Part 15 devices has become so huge and diverse that any attempts to reverse course by restricting Part 15 devices would result in an enforcement nightmare.

The public interest dictates that the Commission remain faithful to its long-standing policy. This policy was well enunciated in the Commission's 1989 order which greatly expanded the number and types of Part 15 devices

that were authorized to operate in the 902-928 MHz band. The Commission noted that "there is a strong demand by the public for the types of devices that are typically authorized under Part 15" and that the rules for Part 15 devices in the 902-928 MHz band would

enable manufacturers to introduce new equipment providing major benefits to consumers and to take advantage of new technologies We believe that manufacturers, if given the opportunity to use the ISM frequencies, will develop many new and practical uses of Part 15 devices.

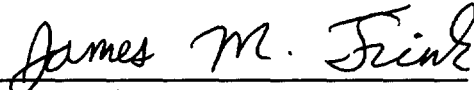
Crippling Part 15 devices in the 902-928 MHz band would cause irreparable and widespread harms to consumers. Furthermore, it would cause the loss of tens of thousands of jobs, damage the businesses of many Part 15 manufacturers, and cost their customers billions of dollars in wasted investment.

To avoid massive dislocation and stranded investment and yet accommodate the low-interference needs of all concerned, AVM and LMS services should be placed elsewhere in the radio spectrum, perhaps in the uncrowded 1.85 to 2.20 GHz "emerging technologies" band. If this is not possible, the Commission should require AVM operators to

utilize spectrum-efficient equipment, limit their operations to the 920-928 MHz sub-band, and establish an advisory committee to study ways to minimize interference among the band's current users.

Respectfully submitted,

SENSORMATIC ELECTRONICS CORPORATION



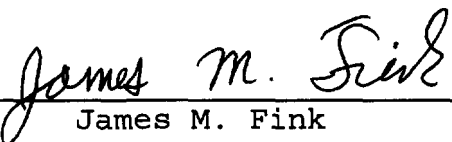
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CERTIFICATE OF SERVICE

I, James M. Fink, do hereby certify on this 28th day of June, 1993, that I have caused a copy of the foregoing Comments of Sensormatic Electronics Corporation to be mailed via Federal Express, postage prepaid, to the persons named on the attached service list.



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